

Study on the optimal stack diameter on the efficiency of thermoacoustic engine

Abstract

The scarcity of energy resources has been attracting some researchers to find some renewable energy alternative. On the other hand, there are many waste heats from industry which are harmful for our environment. The waste heat can be converted into useful energy using thermoacoustic technology like thermoacoustic engine. There are some parameters have impact on the engine efficiency. One of them is stack's diameter of the thermoacoustic engine. Therefore, the aim of the research is to find the optimal stack's diameter. The investigation was conducted numerically. It was found that the optimal stack's diameter is 2 cm and the efficiency of the thermoacoustic engine is 36 %. © 2023 Author(s).

Keywords

efficiency; stack diameter; Thermoacoustic Engine